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The impact of IFRS adoption on the quality of consolidated financial reporting

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Abstract

In the majority of cases (at least on the large European stock markets) listed companies own one or more subsidiaries and therefore are obligated to a dual reporting, being required to produce two sets of financial statements – one at individual level, the other at group level. Furthermore, as of 2005, companies listed on the European stock markets had to adopt IFRS for the preparation of their group accounts, thus needing also to apply different accounting regulations: IFRS for the group accounts and European directives for individual accounts. This study investigates through an empirical association study the impact of the mandatory adoption of IFRS starting with 2005 on the absolute and relative quality (measured through value relevance) of financial information supplied by the consolidated accounts for companies listed on the largest European stock markets (London, Paris, and Frankfurt stock exchanges). The results show an increase of consolidated statements quality (value relevance) once IFRS were adopted, thus suggesting also that the IFRS adoption in Europe led to better complying with the OECD Corporate Governance Principle of high quality disclosure and transparency. Moreover, we ascertained an increase in the quality surplus supplied by group accounts compared to parent company individual accounts once the IFRS adoption became mandatory for preparing consolidated financial statements.

Keywords: Consolidated financial statements, IFRS adoption, finacial reporting quality, European capital market;

1. Introduction

Financial information is supplied mainly through financial statements of entities (listed on the capital market). In the majority of cases (at least on the large European stock markets) listed companies own one or more subsidiaries, and therefore are obligated (through national accounting legislation as well as stock exchange regulations) to prepare consolidated financial statements for the group they own. At the same time, as legal persons, companies are legally obligated to present individual financial statements. Consequently, parent companies are obligated to a dual reporting, being required to produce two sets of financial statements – one at individual level, the other at group level. Furthermore, beginning with January, 1st 2005, companies listed on the European stock markets had to adopt IFRS for the preparation of their group accounts. In consequence, European parent companies need not just prepare two sets of financial statements, but have to apply different accounting regulations: IFRS for the group accounts and European directives for individual accounts. Therefore, the following question

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arises – what is the impact of the mandatory adoption of IFRS in the E.U. on the absolute and relative quality (measured through value relevance) of consolidated financial reporting? An appropriate environment for measuring the quality of consolidated financial reporting is the capital market, where investors' decisions (as users of financial information) are reflected directly in the share price of the reporting entity. In this context, market value relevance (as a main and fundamental characteristic of financial information quality) is measured by the ability of financial information to capture or summarize information that influences share prices (Francis & Schipper, 1999).

Considering all these aspects, the purpose of this scientific endeavor is to carry out an empirical association study in order to investigate the impact of the mandatory IFRS adoption starting with 2005 on the absolute and incremental value relevance (and thus on the quality) of financial information supplied by the consolidated financial reporting.

Regarding the value relevance of consolidated information in the context of the IFRS transition, there are a series of empirical studies that have proven the rise of market value relevance following IFRS adoption (Bartov et al., 2005; Jermakowicz et al., 2007, Barth et al., 2007; Lin and Paananen, 2007). However, there are also studies showing that IFRS has not lead to a rise in the market value relevance of consolidated financial statements (Callao et al., 2007; Hung and Subramanyam, 2007; Gjerde et al., 2008; Paananen, 2008). According to a recent study (Armstrong et al., 2010), the mandatory application of IFRS when presenting consolidated financial statements starting with 2005 determines an improvement of the quality of accounting information as seen by the investors.

The reminder of the paper is organized as follows. The next section explains the research methodology (including sample selection as well as the development of hypotheses and empirical models). Section 4.3 reports the descriptive statistics while in section 4.4 we expose the empirical results obtained. The final section provides a summary of results and conclusions.

2. Research methodology

2.1. Sample selection

In this empirical research we followed the analysis of market value relevance of consolidated accounting information for companies listed on the largest three European stock markets (Deutsche Börse, London Stock Exchange and NYSE Euronext - based on market capitalization and the volume of share trading) in 2003-2008. The main criteria for selection was the belonging to the main index which includes the first 100 of the largest and most traded companies on that particular stock exchange, namely FTSE 100, EURONEXT 100, and HDAX 110.

We excluded financial and insurance companies from the sample because their structure and accounting practices differ significantly from those of non-financial companies (Hellström, 2006: 335). As well, to eliminate composition differences of the sample from one year to the other (which would affect comparability of results in time), we excluded companies that have not been listed on the stock exchanges for the whole analyzed period. At the same time, to increase the homogeneity of the sample and to use the same time span (31.03 – 30.04) to determine average share price, companies who close financial years (for financial statement purposes) at a date different from 31.12 were excluded. Therefore, after going through these steps, the final sample is made up of 98 companies, respectively 588 firm-year observations.

For the development of the study, we computed average closing share prices for 31.03 – 30.04 of each year, making sure that the companies have already published the annual reports for the preceding year. We consider that using average closing prices for a certain period of time (as opposed to using the closing price of a certain day – for example 31.03) has the advantage of neutralizing possible daily fluctuations of the prices, caused by factors that are not linked to the financial information published in the annual reports.

2.2. Hypotheses development

For the purpose of this study, we formulated the following hypotheses related to the impact of the mandatory adoption of IFRS starting with 2005 on the absolute and incremental value relevance (and thus on the quality) of financial information supplied by the consolidated financial reporting.

Hypothesis 1: Consolidated financial statements presented according to International Financial Reporting Standards (IFRS) are of higher quality (i.e. are more value relevant) than consolidated financial statements presented according to national regulations (which are based on European accounting directives). International Financial Reporting Standards are generally perceived as being of high quality and assuring a high degree of transparency and comparability of financial statements presented according to these standards. These considerations have determined the European Union to impose, starting with 2005 for all listed companies to present consolidated financial statements according to IFRS (adopted by the EU). According to a recent study (Armstrong et al., 2010), mandatory application of IFRS from 2005 when presenting consolidated financial statements leads to an increase of the quality of accounting information perceived by investors. As well, some previous empirical research have proved the increase of market value relevance of consolidated financial statements once IFRS were adopted (Bartov et al., 2005; Jermakowicz et al., 2007, Lin and Paananen, 2007).

Hypothesis 2: The quality (value relevance) surplus supplied by consolidated financial statements (when compared to parent company financial statements) is higher in the context of applying International Financial Reporting Standards (IFRS) when preparing group financial statements. Starting from the perspective of confirming the previous hypothesis, and considering that, from the point of view of their quality, international standards are perceived by investors as superior to European and national accounting regulations, that govern parent company financial statements as well as consolidated financial statements up until 2004 (see Armstrong et al., 2010), in our vision, the increase in the relevance increment between consolidated financial statements and parent company statements is probable, once IFRS was adopted for consolidated reporting.

2.3. Empirical models and variables involved

In order to empirically test the research hypotheses on the impact of the mandatory adoption of IFRS starting with 2005 on the absolute and incremental value relevance (and thus on the quality) of financial information supplied by the consolidated financial reporting, we developed econometric valuation models which measure the degree of association between share price and accounting information supplied by financial statements (equity and net income). The basis for this is the Ohlson (1995) valuation model, which expresses share price as a function of current accounting value of equity plus discounted value of future (abnormal) results.

To compare relevance (as a proxy for quality) in absolute values of information supplied by consolidated financial statements, respectively by parent company financial statements, the following empirical models were elaborated:

Model 1: $$Pit = \alpha 0 + \alpha 1 * pBVit + \alpha 2 * pEit + \varepsilon it \quad (1)$$

Model 2: $$Pit = \alpha 0 + \alpha 1 * cBVit + \alpha 2 * cEit + \varepsilon it \quad (2)$$

Where

pBVit = book value of parent company equity/share of company i in year t

pEit = parent company net income/share of company i in year t

cBVit = book value of group equity/share of company i in year t

cEit = group earnings/share of company i in year t

In order to make inferences regarding incremental utility (quality) of information supplied by consolidated financial statements (considering that both sets of financial statements are published by the sampled companies) we developed a model to include both categories of information:

Model 3: $$Pit = \alpha 0+ \alpha 1 * pBVit+ \alpha 2 * \Delta cBV\ it+ \alpha 3 * pEit+ \alpha 4 * \Delta cE\ it + \varepsilon it \quad (3)$$

Where

ΔcBVit = difference between group equity and parent company equity/share of company i in year t

ΔcEit = difference between group earnings and parent company earnings/share of company i in year t

To test the two hypotheses related to the impact of applying International Financial Reporting Standards (IFRS) on the absolute and relative relevance of consolidated financial statements, we applied the three models described above on samples composed of those specific companies that adopted IFRS starting with 2005. In order to confirm hypothesis 1 (regarding the superior relevance of consolidated financial statements presented according to IFRS), the explanatory power of model 2 for 2005-2006 period (and separately for 2005 and 2006) must be superior to the explanatory power of the same model 2003-2004 period (and separately for 2003 and 2004).

In the end, to confirm/refute the second hypothesis (superiority of relevance variance between consolidated and individual financial statements in the context of IFRS adoption for consolidated reporting), we checked if the difference between the explanatory power of model 3 and the explanatory power of model 1 is greater in 2005-2006 (IFRS application) as opposed to 2003-2004 period (application of national regulations).

3. Descriptive statistics

When analyzing the descriptive statistics regarding the existent associations between the variables employed in the econometric models (see Pearson correlation matrix in table 1), it can be seen that there are strong significant correlations between the dependent variable (share price) and the explanatory variables (equity, respectively earnings per share, at consolidated and individual level), which signals the relevance of these accounting values to explain the market value of companies. Correlations between share price and consolidated accounting values are higher, suggesting the possibility (or even the probability) of superiority (from the market value relevance point of view) of consolidated financial statements as opposed to parent company financial statements. Of course, this supposition is to be confirmed or refuted by statistical inferences (econometric models).

Table 1. Correlation matrix of variables

	Pearson Correlation						
	Price	**cBV**	**cE**	**pBV**	**pE**	**ΔcBV**	**ΔcE**
Price	1.000						
cBV	0.776	1.000					
cE	0.781	0.788	1.000				
pBV	0.679	0.784	0.598	1.000			
pE	0.620	0.407	0.404	0.510	1.000		
ΔcBV	0.552	0.729	0.601	0.146	0.099	1.000	
ΔcE	0.534	0.481	0.709	0.251	-0.329	0.489	1.000

*All correlations are significant at 0,01.

It must be mentioned, as well, the existence of significant correlations between some explanatory variables used in the same econometric models. We are referring especially to group equity and group earnings (per share). These correlations, which indicate the existence of multicollinearity between variables are, however, common to such studies, since they are present in numerous empirical research (see Naceur & Goaied, 2004; Aboody et al., 2002; Hevas et al., 2000; Abad et al., 2000; Rees, 1997; Collins et al., 1997).

As in previous studies, to examine if multicollinearity generates instability of empirical results, we computed, for each coefficient of the explanatory variables from the econometric models, the variance inflation factor (VIF), which quantifies to what extent the variance for a coefficient is increased due to collinearity (Andrei & Bourbonnais, 2008: 274). When variables are not correlated, the variance inflation factor is 1. VIF values of more than 5 (see Jermakowicz et al., 2007) or even 10 (see Kutner & Switala, 2004) are regarded in the specialty literature as indication of (serious) autocorrelation problems between independent variables.

4. Empirical results

In order to test the two hypotheses regarding the impact of applying International Financial Reporting Standards (IFRS) on absolute and relative quality (relevance) of consolidated financial statements, we applied the three regression models on a sample composed of the companies that have adopted consolidated reporting according to IFRS in 2005. That sample was divided in four annual sub-samples (2003, 2004, 2005 and 2006), and respectively in two two-year sub-samples, the first for the period before adopting IFRS (2003-2004), when consolidated financial statements were presented in conformity with national regulations (Local GAAP) and the second of the period after adopting IFRS (2005-2006).

The empirical results obtained after testing regression model 2 on the samples described above (to check hypothesis 1) are presented in table 2. Comparing the explanatory power of the model for 2003-2004 (Local GAAP) with the explanatory power for 2005-2006 (IFRS) reveals it increased in time (Δ Adj. R2) with 16,2% (see table 3).

Table 2. Empirical results for regression model 2 applied to the sub-sample of companies that adopted IFRS in 2005

Period/ Sample		**Characteristics**	**MODEL 2**			
		α0	**cBV**	**cE**	**F**	**Adj. R^2**
2003-2004 /	**Alfa**	10.595	0.561	1.911		
Local GAAP	**t**	5.926****	5.667****	3.163***	88.634	**61.70%**
n= 122	**VIF**	-	2.532	2.532		
2005-2006 /	**Alfa**	12.848	0.972	2.723		
IFRS	**t**	6.193****	7.074****	3.184***	206.906	**77.90%**
n= 122	**VIF**	-	4.161	4.161		
2003 /	**Alfa**	9.636	0.677	1.161		
Local GAAP	**t**	3.690****	3.729****	0.868	36.6	**58.30%**
n= 61	**VIF**	-	3.63	3.63		
2004 /	**Alfa**	11.477	0.509	2.117		
Local GAAP	**t**	4.576****	4.027****	3.038***	56.593	**63.10%**
n= 61	**VIF**	-	2.271	2.271		
2005 /	**Alfa**	11.134	0.93	2.102		
IFRS	**t**	4.312****	5.445****	2.026**	104.827	**77.90%**
n= 61	**VIF**	-	3.968	3.968		
2006 /	**Alfa**	11.491	0.61	6.449		
IFRS	**t**	3.578****	3.609****	6.736****	138.306	**82.30%**
n= 61	**VIF**	-	2.837	2.837		

**** significant at 0.001; *** sig. at 0.01; ** sig. at 0.05

Table 3. Evolution of the value relevance of CFS before and after adopting IFRS

	2003	**2004**	**2005**	**2006**	**2003-2004**	**2005-2006**
	Local GAAP	**Local GAAP**	**IFRS**	**IFRS**	**Local GAAP**	**IFRS**
Adj. R^2	58.3%	63.1%	77.9%	82.3%	61.7%	77.9%
Δ Adj. R^2	***	***4.8%***	***14.8%***	***4.4%***	***	***16,2%***

Detailing the analysis (at year level), reveals an increase from year to year of the explanatory power of the model, but at a different pace: therefore, if between 2003 and 2004 (Local GAAP) respectively between 2005 and 2006 (IFRS) the increase is of 4,8% and of 4,4%, between 2004 and 2005 (transition from Local GAAP to IFRS) the increase in explanatory power is of 14,8%, that is 3 times more than the previous and the subsequent increase. Because the explanatory power of the econometric model is used as a measure of value relevance of financial statements, it implicitly results the confirmation of the first hypothesis regarding the higher level of quality of consolidated financial statements presented according to IFRS than presented according to national regulations.

Table 4. Evolution of the value relevance increment of CFS as opposed to PFS before and after adopting IFRS

	2003	2004	2005	2006	2003-2004	2005-2006
	Local GAAP	**Local GAAP**	**IFRS**	**IFRS**	**Local GAAP**	**IFRS**
Adj. R^2 MODEL 1 PFS	46.4%	51.5%	64.8%	63.3%	50.7%	66.2%
Adj. R^2 MODEL 3 CFS*	59.2%	56.1%	80.9%	77.0%	56.8%	78.9%
Δ Adj. R^2 (M3 – M1)	***12.8%***	***4.6%***	***16.1%***	***13.7%***	***6.1%***	***12.7%***
Sig.	0.000	0.025	0.000	0.000	0.000	0.000

To verify the last hypothesis regarding the superiority of the difference in quality (relevance) between consolidated and individual financial statements in the context of IFRS adoption we again tested empirically models 1 and 3 for the specific samples described in the previous paragraph. The results obtained (see table 5) reveal an increase of the difference between the explanatory powers (ΔAdj. R2) corresponding to models 3 and respectively 1 (statistically significant at 0,0001), from 6,1% in 2003-2004 (Local GAAP) to 12,7% in 2005-2006 (IFRS).

Table 5. Empirical results for models 1 and 3 applied to the sample of companies who adopted IFRS in 2005

Period /	**Characteristics MODEL 1**						**Characteristics MODEL 3**						
Sample		**α0**	**pBV**	**pE**	**F**	**Adj. R2**	**α0**	**pBV**	**ΔcBV**	**pE**	**ΔcE**	**F**	**Adj. R2**
2003-2004 /	**Alfa**	12.024	0.331	5.91			10.945	0.364	0.438	5.011	0.222		
Local GAAP	**t**	5.985****	3.137***	5.445****	58.632	**50.7%**	5.744****	3.059***	3.522****	4.513****	0.418	37.871	**56.8%**
n= 122	**VIF**	-	1.868	1.868			-	2.723	1.343	2.232	1.654		
2005-2006 /	**Alfa**	11.471	1.392	4.973			11.484	1.095	0.747	4.008	1.01		
IFRS	**t**	3.945****	7.298****	2.992***	114.549	**66.2%**	5.000****	5.965****	3.897****	2.431**	2.140**	109.509	**78.9%**
n= 122	**VIF**	-	2.398	2.398			-	3.557	2.763	3.784	2.854		
2003 /	**Alfa**	11.788	0.44	3.795			10.221	0.362	0.507	3.94	2.627		
Local GAAP	**t**	4.177****	3.167***	3.239***	23.953	**46.4%**	4.085****	2.429**	2.897***	3.035***	2.618**	20.212	**59.2%**
n= 61	**VIF**	-	1.486	1.486			-	2.251	1.241	2.395	1.454		
2004 /	**Alfa**	11.429	0.065	9.725			10.197	0.114	0.444	8.995	-0.281		
Local GAAP	**t**	3.861****	0.351	4.337****	32.375	**51.5%**	3.561****	0.564	2.530**	4.122****	-0.399	19.851	**56.1%**
n= 61	**VIF**	-	3.022	3.022			-	3.924	1.488	3.16	2.033		
2005 /	**Alfa**	9.266	1.469	4.671			11.016	0.958	0.591	4.54	1.159		
IFRS	**t**	2.137**	6.427****	2.154**	52.5	**64.8%**	3.436****	4.416****	2.243**	2.154**	2.093**	60.247	**80.9%**
n= 61	**VIF**	-	1.657	1.657			-	2.748	3.699	2.884	4.029		
2006 /	**Alfa**	14.616	0.985	7.309			11.612	1.019	0.639	3.568	4.274		
IFRS	**t**	3.415****	2.639***	2.369**	50.947	**63.3%**	3.372****	3.200***	2.224**	1.294	3.142***	49.653	**77.0%**
n= 61	**VIF**	-	4.328	4.328			-	5.035	2.074	5.532	1.793		

**** significant at 0.001; *** significant at 0.01; ** significant at 0.05; * significant at 0.1

At the same time, from the analysis at year level results a surplus of explanatory power for model 3 (again statistically significant) higher for 2005 (16,1%) and 2006 (13.7%), when consolidated financial statements were presented according to IFRS, as opposed to 2003 (12,8%) and 2004 (4,6%), when group reporting was made according to national regulations (based on European accounting directives).

These empirical results clearly lead to statistically confirming *the second hypothesis* regarding the higher level of quality surplus (increment) supplied by group statements (as opposed to parent company financial statements) in the context of applying IFRS as opposed to applying national regulations for consolidated reporting.

5. Summary and conclusions

In this study we used econometric regression models in order to investigate the impact which the IFRS mandatory adoption as of 2005 had on the absolute and incremental quality (measured through value relevance) of financial information supplied by the consolidated financial reporting for companies listed during 2003-2008 on the largest stock markets in Europe (London, Paris, and Frankfurt stock exchanges).

The statistical results have confirmed the initial prediction regarding the increase of consolidated statements quality (value relevance) once IFRS were adopted. Thus, we join the conclusions reached by more authors (e.g. Bartov et al., 2005; Jermakowicz et al., 2007, Barth et al., 2007; Lin and Paananen, 2007) as a result of some empirical research on this matter. These results also show that the IFRS adoption in Europe leads to better complying with the OECD Corporate Governance Principle of high quality disclosure and transparency.

Moreover, we ascertained (according to predictions) an increase in the quality surplus (increment) supplied by group financial statements compared to parent company individual financial statements once the adoption of IFRS became mandatory for preparing consolidated financial statements. It also must be emphasized the fact that, even in the situation of presenting group financial statements according to national regulations (which is based on European accounting directives) they have a superior quality (i.e. relevance) compared to individual statements (presented according to national regulations). This idea comes to strengthen the conclusions exposed in the previous paragraph.

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